1001 Pennsylvania Avenue, NW, Washington, DC 20004-2595 ▪ p202 624-2500 ▪ f202 628-5116

crowell moring

William D. Wallace
(202) 624-2807
wwallace@crowell.com

August 15, 2002

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: IB Docket No. 01-185 Ex Parte Notice

Dear Ms. Dortch:

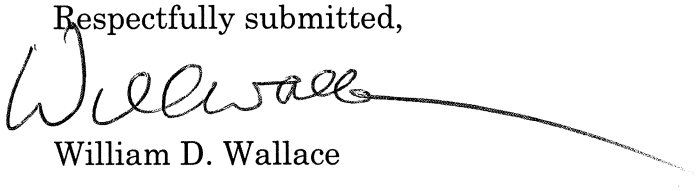
On August 14, 2002, William F. Adler of Globalstar, L.P. and the undersigned participated in a meeting with Evan Kwerel and John Willliams of the Office of Plans and Policy regarding Globalstar, L.P.'s positions on issues in the above-referenced docket, with particular reference to the Above 1 GHz MSS bands.

As indicated on the enclosed handout, "Flexibility for Mobile Satellite Service Providers" (dated June 28, 2002), which was distributed at the meeting, Globalstar, L.P., believes that grant of ATC authority to MSS licensees would serve the public interest, and opposes severance of any part of the MSS spectrum for assignment to a separate ATC provider. We explained how Globalstar could use the 1.6/2.4 GHz MSS spectrum to offer ATC in selected urban areas, and explained operational differences between Globalstar and other MSS systems. We also noted that severing ATC authority from the MSS license is not technically feasible, and would eliminate the benefits and efficiencies that an MSS licensee can derive in providing ATC coordinated with MSS.

We also distributed the written response of Globalstar, L.P., filed in this docket on June 27, 2002, to certain technical comments in the record, in particular, the potential capacity of the ATC component of an MSS system, which is highlighted on the second handout, "ATC Capacity."

Pursuant to Section 1.1206(b)(2) of the Commission's Rules, this letter and the enclosures are being filed electronically over the Commission's Electronic Comment Filing System.

Respectfully submitted,



William D. Wallace

Enclosures

Federal Communications Commission

Flexibility for Mobile Satellite Service Providers
Ancillary Terrestrial Component
IB Docket No. 01-185

June 28, 2002

Globalstar

Globalstar System Ground Segment

- Feeder link spectrum at 5091-5250/6875-7055 GHz
- 24 Gateways in commercial service
  - 2 Gateways in the field but not in service
- 12 Gateways in storage in Long Beach, California
- 6 Worldwide satellite telemetry ground stations integrally incorporated into gateway network (5 currently operating)
- 2 Control Centers in California
- Global Data Network connects entire terrestrial infrastructure

Globalstar System Space Segment

- Service link spectrum at 1610-1626.5/2483.5-2500 MHz
- First Generation Constellation
  - 48 Satellite constellation
  - 2 In-orbit spare satellites
  - 10-Year life predicted
- Second Generation Constellation
  - Licensed to launch and operate GEO/LEO system in 2 GHz Band

Restructuring Status

- Chapter 11 Petition filed February 15, 2002 in Delaware
  - Includes consensual restructuring plan with principal creditors
  - Not a liquidation!
- Operating as debtor-in-possession
  - Service continues as before
  - Bare-bones operating expense budget
- Implementing business consolidation strategy
  - Includes the “roll up” of certain service provider gateways
- Soliciting additional investment
- Will emerge as the New Globalstar

Globalstar

Restructuring Status

- First consolidation transaction: the purchase of Vodafone's assets in North America, signed December 18, 2001
  - Five associated applications placed on Public Notice on February 27, 2002
  - Applications unopposed, awaiting International Bureau decision
- Globalstar, through a subsidiary, will replace Vodafone Satellite Services as the MSS service provider in North America

Globalstar

Restructuring Status

- Second consolidation transaction: the purchase of TE.SA.M.'s assets in France, scheduled to close on July 2, 2002
  - Gateway in Aussaguel, France
  - 15,000 phones
  - Billing and other back office equipment
  - Reinstitute full commercial service in the Fall

Globalstar

Restructuring Status

- Economic recession for two years has depressed all telecom business and reduced Globalstar's revenue
- Assets are underutilized
  - Minutes must be wrung from the system
- **ATC authority** kick-starts New Globalstar's business as economy recovers from recession

Globalstar

ATC Authority is in the Public Interest

- ATC significantly improves spectrum utilization
- ATC significantly improves the economics of MSS operation
  - Broadens base of potential subscribers
  - Induces more usage, improving average revenue per unit in service
  - Jump-starts new product development
- ATC provides a reliable, ubiquitous, primary or back-up public safety and emergency response system
- **Globalstar desires ATC authority in both its existing L/S Band and in the 2 GHz Band for next generation**

Globalstar

ATC authority cannot be separated from MSS license

- Reduction in L/S Band spectrum for MSS not seriously suggested
- Reduction in L/S Band spectrum would
  - Force costly redesign of system software
  - Require modification of existing Globalstar handsets
  - Reduce system capacity, perhaps ruinously
  - Limit introduction of new MSS services, such as aircraft monitoring

(continued)

Globalstar

ATC authority cannot be separated from MSS license

- Keep cost of service high, subscriber base and income low
- Decrease financing for replacement/next generation system due to less income
- Compromise Globalstar's existing ability to avoid interference to/coordinate with Radioastronomy, GPS, GLONASS, ITFS, others
  - CDMA MSS operators require all of the licensed spectrum in order to coordinate with these services
- Preclude multiple CDMA MSS systems in L/S Band

ATC authority cannot be separated from MSS license

- Separate MSS/ATC operations are not technically feasible
  - No way to re-use channels in two separate systems
  - No reasonable way to manage interference between ATC and MSS systems
  - No equitable way to assign channels dynamically to different systems
  - Creates host of operational support systems problems for numbering, billing, roaming, etc.

Globalstar

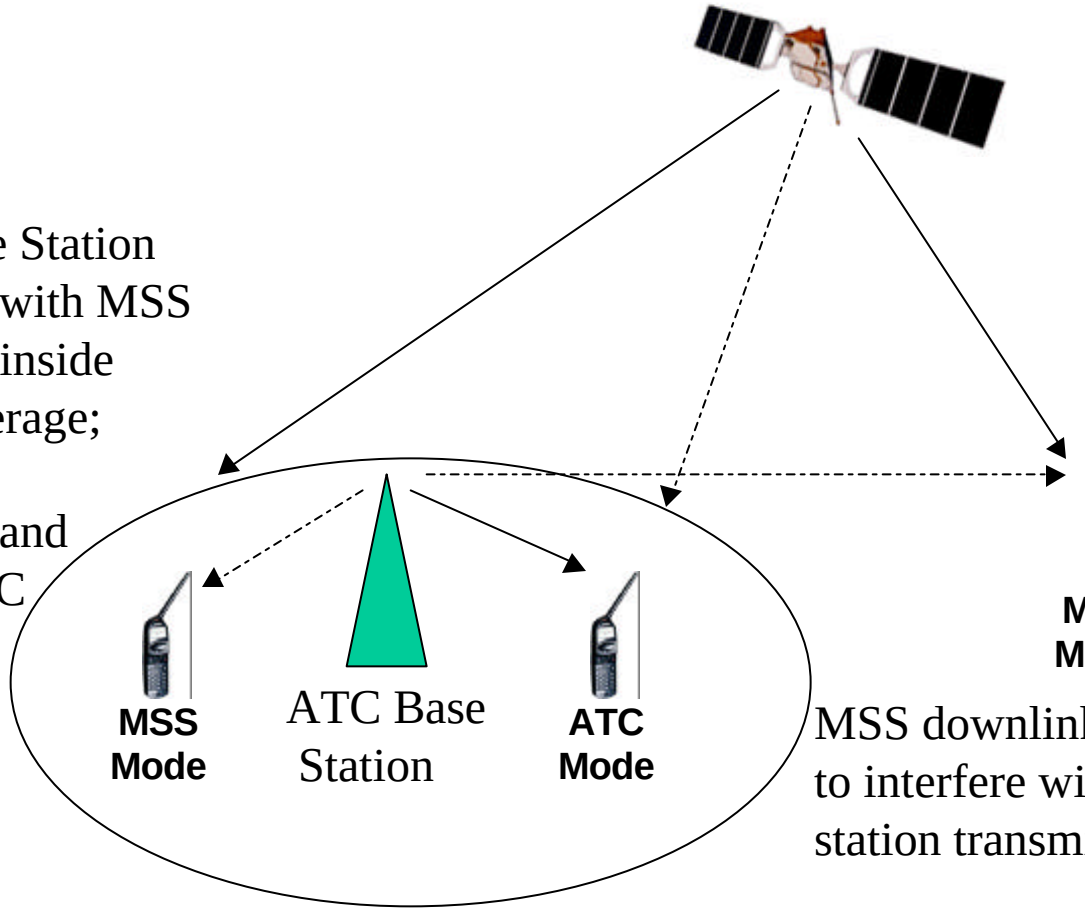
Single CDMA operator can manage MSS/ATC shared bandwidth

- Forward band sharing works with Globalstar's current satellites and network
  - Satellite downlinks do not interfere with base station transmissions
  - ATC base station will interfere with MSS user within base station coverage
    - Unless MSS mode uses different frequency
    - But, no interference when MSS user is outside ATC coverage
  - ATC terminal transmissions will degrade satellite capacity
    - This is manageable with MSS and ATC frequency assignment control

Globalstar

Single CDMA operator can manage MSS/ATC shared downlink bandwidth

ATC Base Station interferes with MSS downlink inside ATC coverage; MSS uses separate band inside ATC coverage



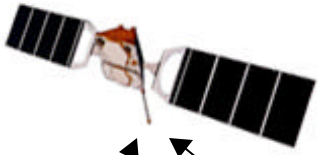
No interference when MSS terminal outside of ATC Coverage; MSS can use whole downlink

MSS downlink too weak to interfere with ATC base station transmissions

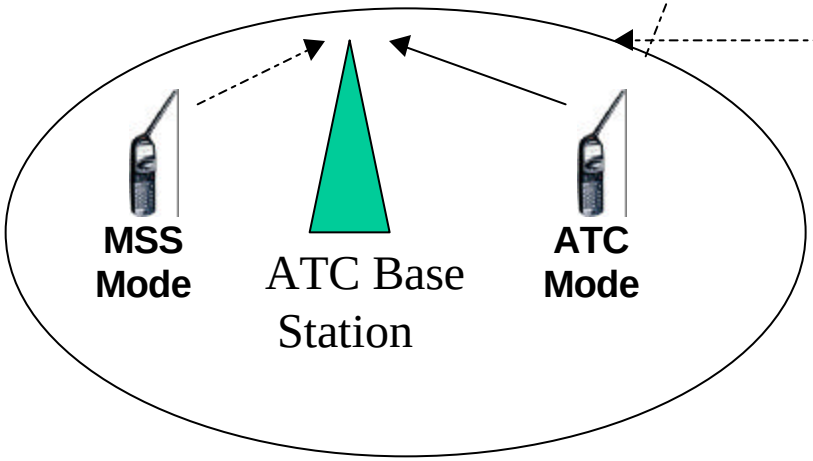
Globalstar

Single CDMA operator can manage MSS/ATC shared uplink bandwidth

ATC could interfere with MSS terminal transmissions;
ATC terminal transmits less power and frequency assignment allows operation



MSS terminal could interfere with ATC terminal transmissions; MSS uses separate band inside ATC coverage



No interference when MSS terminal outside of ATC Coverage; MSS can use whole uplink

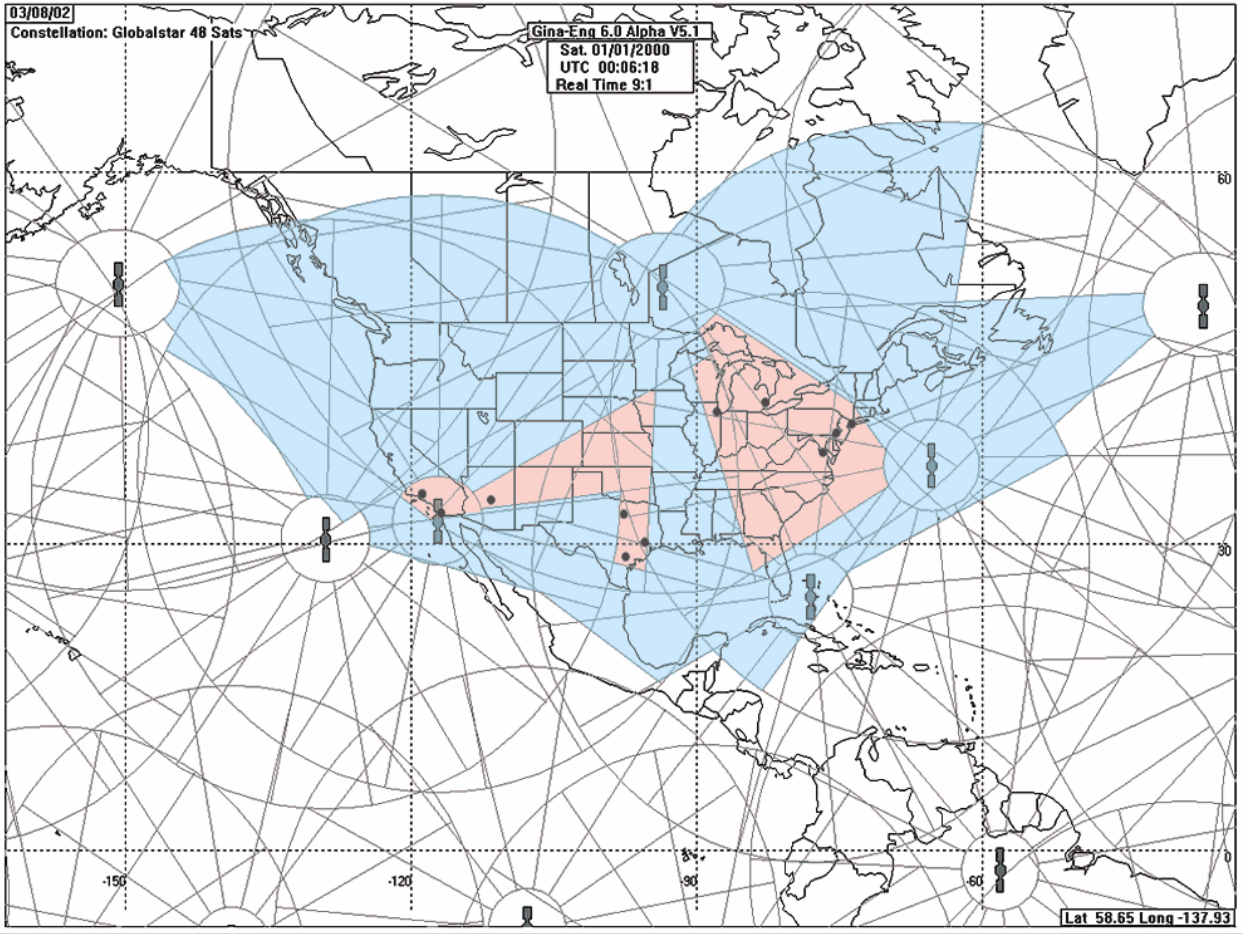
Globalstar

Single CDMA operator can manage MSS/ATC shared bandwidth

- By allowing MSS operator to integrate ATC and share bandwidth, frequency re-use and capacity is increased by 50% relative to band split between ATC and MSS
  - Improvement is between 55% and 58% by beam count based on following examples
  - MSS operator has to dynamically control frequency assignments in order to achieve this efficiency

ATC Frequency Interference Zones Example A

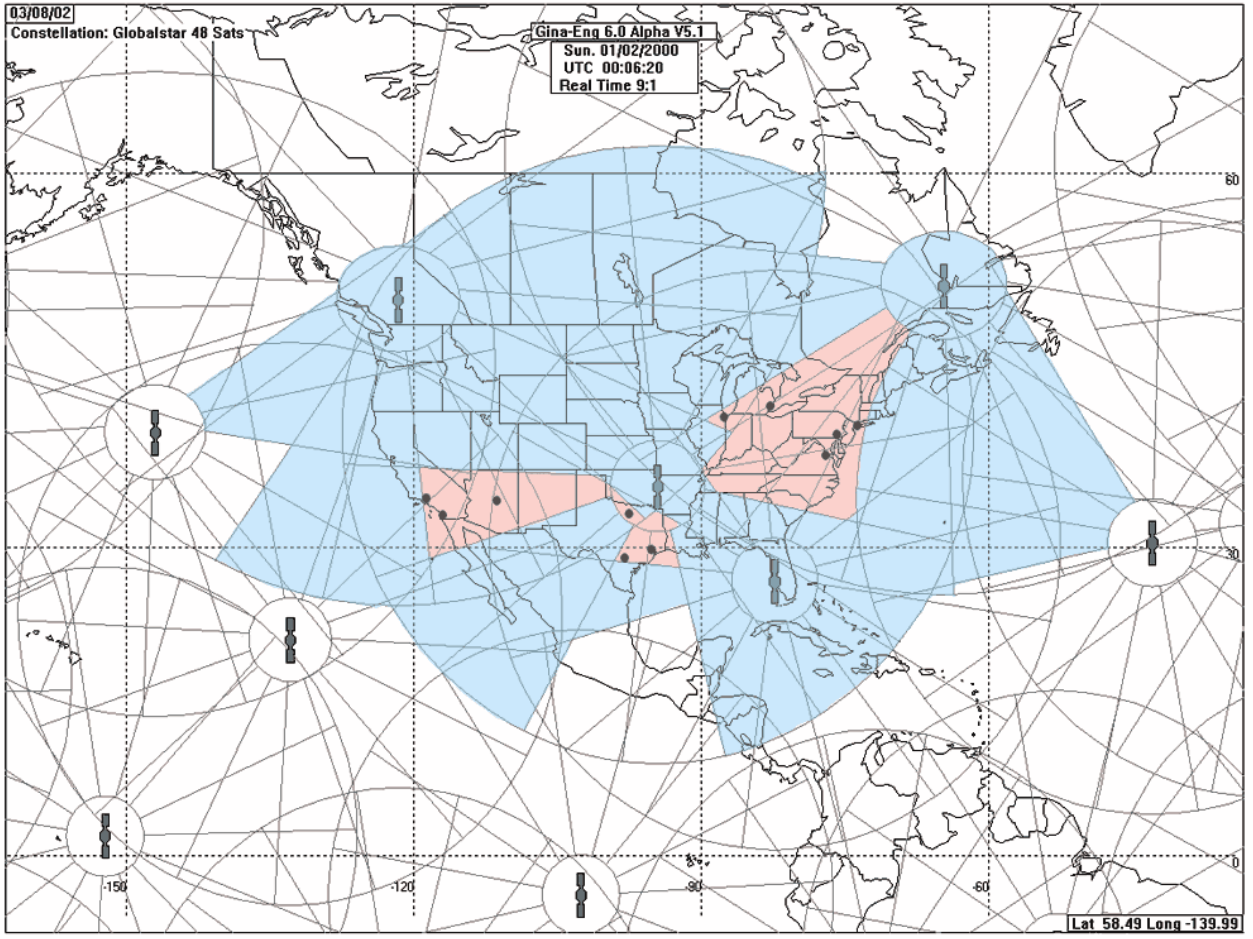
- 10 most populous cities + DC assumed to have ATC services
- Blue zones show normal full-spectrum MSS beams
- Pink zones show regions where worst case ATC frequency interference causes lack of MSS service in ATC frequencies



Globalstar

ATC Frequency Interference Zones Example B

- Same as Example “A” except one day later to show dynamics of ATC interference zones



Globalstar

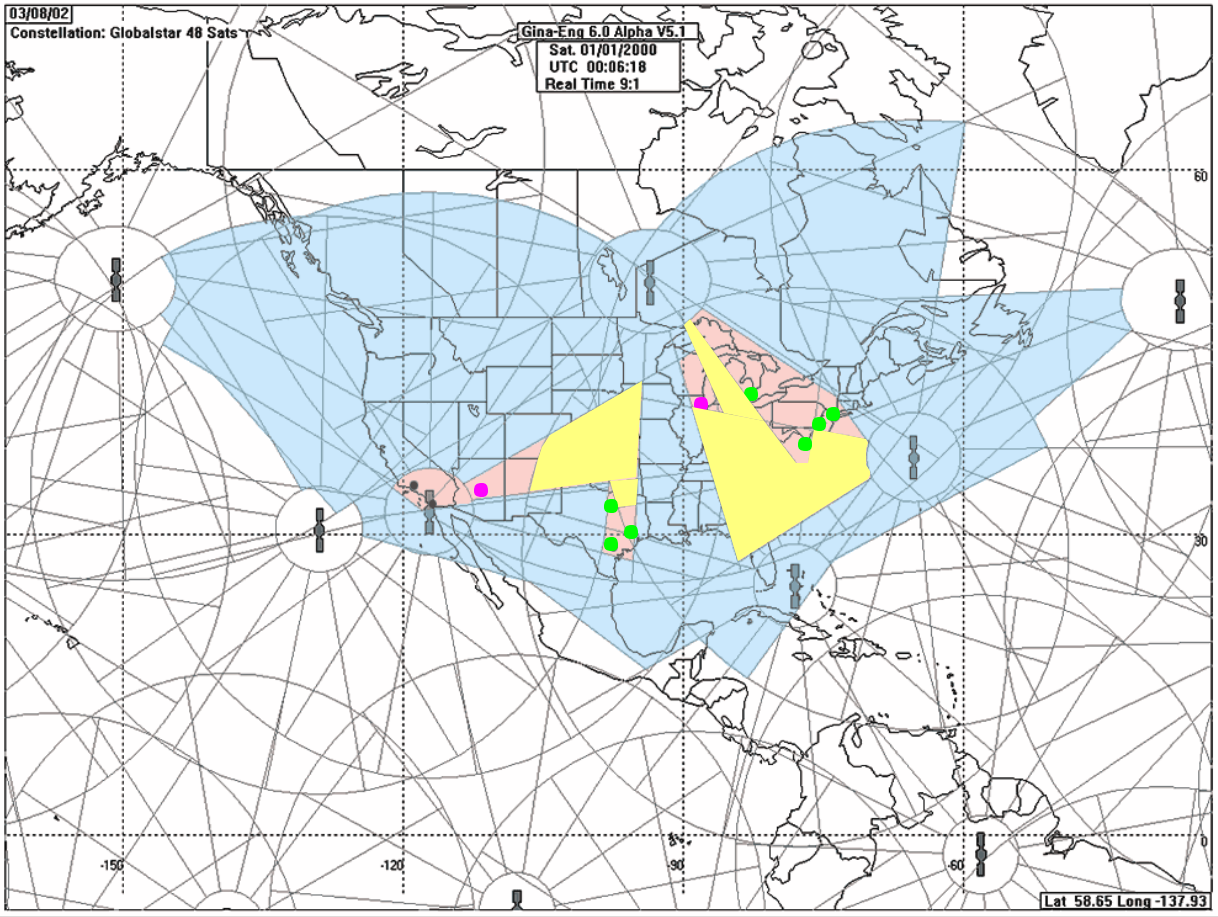
Efficiency gained from single MSS/ATC system operator

- Additional frequency re-use is achieved when the MSS operator can dynamically assign MSS and ATC frequencies together
  - Up to another 50 % re-use
  - Frequency assignment algorithms exist that create these efficiencies
- Quality of service also improves with single MSS/ATC operator

Globalstar

Dynamic Frequency Assignments Example A

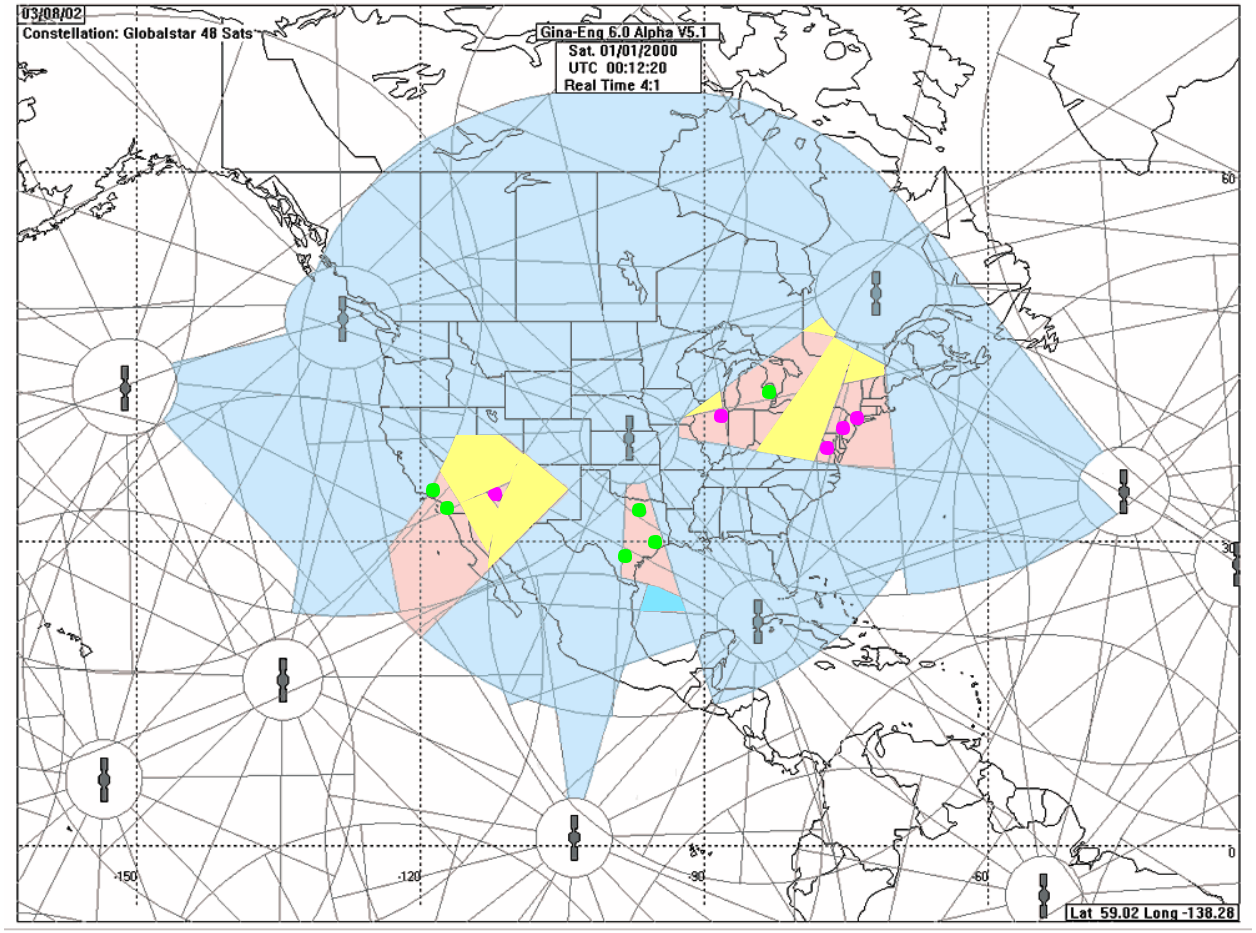
- Yellow zones show improvement in MSS service area by assigning two separate frequencies dynamically to MSS and ATC segments
- Yellow zones have all MSS frequencies via select satellites
- Separate ATC frequencies designated by purple and green dots
- Shows 50% more re-use



Globalstar

Dynamic Frequency Assignments Example B

- Same as Example “A” except six minutes later to show dynamics of ATC interference zones and required frequency coordination between MSS and ATC segments



Globalstar

Big LEO Spectrum can be shared by CDMA MSS/ATC operators

- CDMA MSS shares full spectrum in accordance with FCC rules and ITU Radio Regulations
- Operators coordinate separate ATC spectrum
  - Operators can offer ATC in the same locations
- Operators can reserve some spectrum for MSS only
  - Allows for service to MSS only terminals in ATC service areas

Globalstar

Big LEO Spectrum can be shared by CDMA MSS/ATC operators

- MSS downlink shared by coordinating system PFD limit
- ATC downlink and uplink shared by coordinating separate spectrum per area
- MSS uplink shared by aggregate EIRP limits
  - Limits apply to both MSS and ATC terminals
  - Value of aggregate EIRP is higher in the bandwidth in which operator uses ATC
  - Lower value in MSS part of band

Globalstar

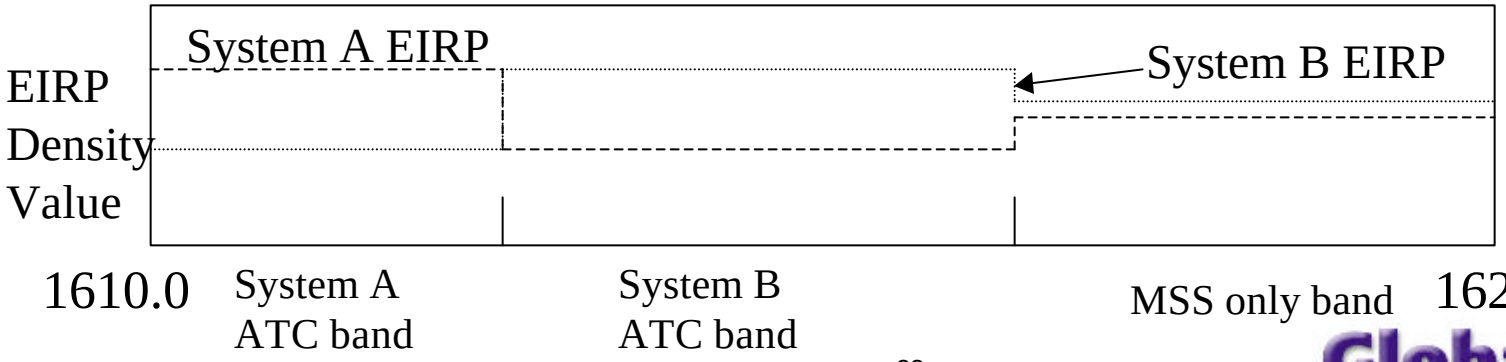
MSS/ATC Operator to MSS/ATC Operator Spectrum Coordination

- Downlink

MSS operations share the whole band by coordinating downlink spectral power flux density limits
ATC operations split the band per small geographical area (city size)

2483.5 2500.0

- Uplink is shared by setting aggregate uplink EIRP spectral density - MSS over whole band, ATC split



Globalstar

Interference Considerations

- Part 25/GMPCS Big LEO technical rules fully protect other in-band and out-of-band licensees
- ATC operated by MSS licensee causes no additional in-band interference
  - ATC Radio Astronomy interference would be limited in accordance with existing coordination agreement which uses exclusion zones and power limits
  - ATC Base Station placement will be done in coordination with existing Fixed Service installations

Interference Considerations

- ATC operated by MSS licensee causes no additional out-of-band interference
  - ATC terminals will have the same OOB specifications as Globalstar's MSS terminals
    - Interference to GPS and GLONASS will be limited according to FCC proposed rules
    - Interference to Iridium will be limited according to ITU recommendations
  - ATC base stations will not interfere with ITFS or MMDS if operated below 2498.0 MHz
    - Base stations operating above 2498.0 MHz will be placed in coordination with nearby ITFS and MMDS stations

2 GHz MSS vs. Big LEO MSS

- Exactly the same technical considerations apply
  - Dynamic channel assignment
  - Control of interference
  - Efficient utilization of bandwidth
  - Maximizing number of subscribers within licensed bandwidth
  - Better quality of service in metropolitan areas

2 GHz MSS vs. Big LEO MSS

- Grant of ATC authority to L/S Band MSS would
  - Boost an important, struggling industry
  - Result in exciting new options for consumers
  - Allow MSS to meet emerging public safety and emergency services requirements
  - Maximize public benefit by increasing potential subscribers and reusing existing spectrum

Globalstar

Summary

- ATC authority is valuable to MSS licensees and to consumers. It should be implemented expeditiously.
- It is not technically feasible for a MSS system and a separately-operated ATC to co-exist in a single spectrum band.
- At least two CDMA MSS operators can share the Big LEO spectrum and provide ATC.

Globalstar

Federal Communications Commission

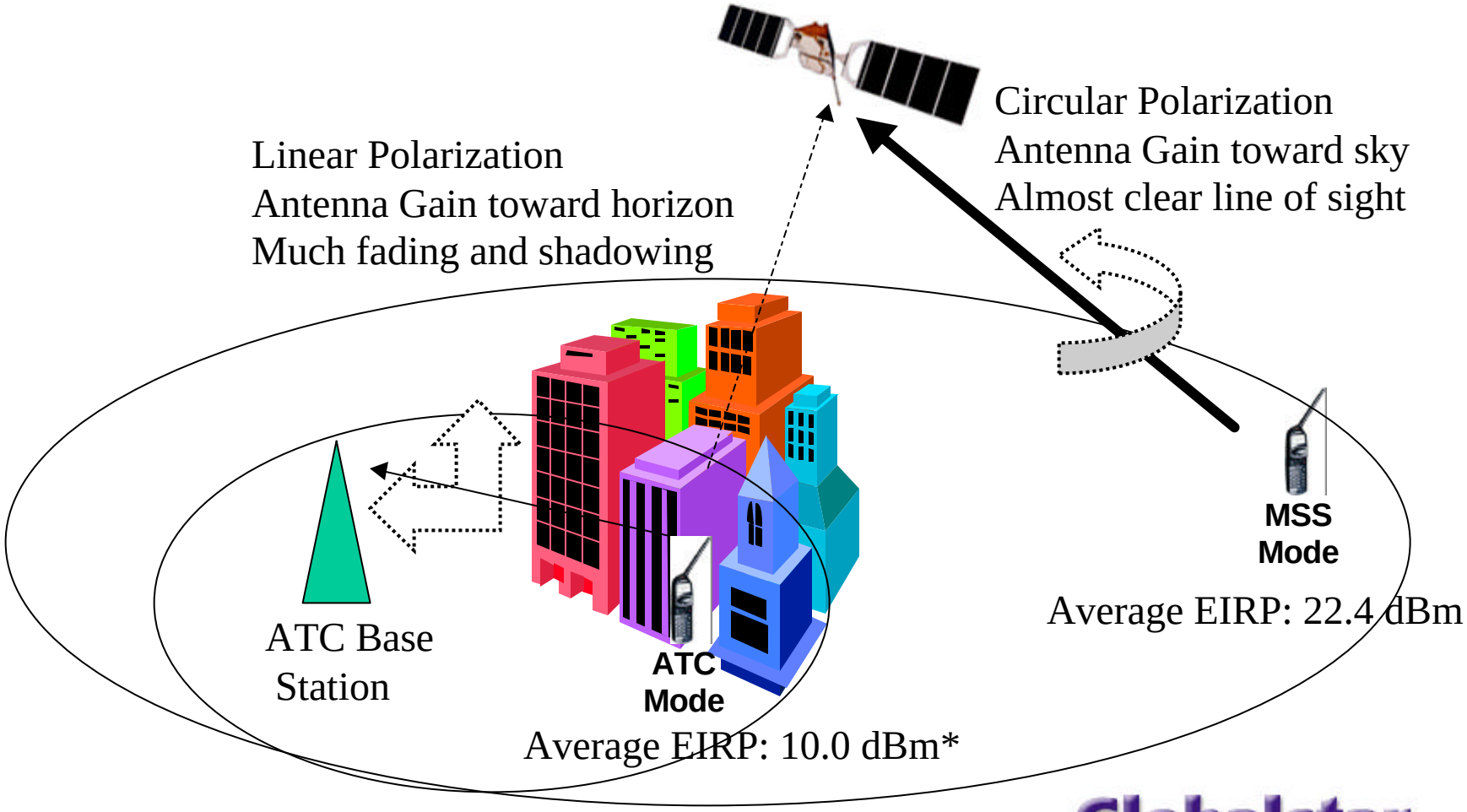
ATC CAPACITY

IB Docket No. 01-185

June 28, 2002

Globalstar

MSS/ATC Uplink Capacity Radio Link Factors



* The CDMA Developers Group validates various parameters through the users group. The average power from an IS-95 MS is 10 dBm. See www.cdg.org

Globalstar

490 ATC Calls Equals 60 MSS Calls at Satellite Receiver

Difference Between MSS and ATC Radio Link Factors		
Average EIRP	12.4	dB
Polarization Mismatch	3.0	dB
Antenna Gain Toward Satellite	1.0	dB
Propagation Losses Toward Satellite*	10.5	dB
Total	26.9	dB
MSS to ATC Factor	490	scaler

***** Based upon the "Hata" model which is given in ITU-R Recommendation P529-3

Globalstar

Operational Capacity Factors

- Globalstar system supports about 60 simultaneous calls per channel
  - Capacity assumes adjacent channel interference and adjacent beam interference
- The average number of beams covering CONUS ATC sites is 4
- 60 x 4 = 240 simultaneous MSS calls per channel in beams with ATC sites

Globalstar supports 3.9 million ATC subscribers

- 240 MSS calls in CONUS x 490 ATC calls per MSS call = 117,600 simultaneous ATC calls
- Assuming cellular offered load of 30 milliErlangs*
  - 117,600 X 1/0.03 = 3,920,000 subscribers

- Globalstar supports 3.9 million ATC subscribers with no loss in MSS service in adjacent beams or adjacent channels

* "Cellular Radio - Principles and Design" by R.C. V. Macario, McGraw-Hill, New York, 1993, pp. 200-201

Globalstar